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MICRO PAYMENT-BASED ADVERTISING

FIELD OF THE INVENTION

The present invention relates generally to electronic commerce, and specifically to methods and systems for conveying payments over communication networks.

BACKGROUND OF THE INVENTION

One of the key problems in electronic commerce over the Internet is finding secure and efficient methods of payment for goods and services. Most existing mechanisms support credit card-based payments. The surcharges and delays associated with these transactions, however, present significant problems and make small purchases uneconomic. Mechanisms of micro payment have been developed in order to overcome these problems. Micro payments make it feasible and profitable for merchants to sell information, services and other content over the Internet, even in transaction amounts of a dollar or less.

IBM Corporation (Armonk, New York) has developed a system of Micro Payments, which is described at www.alphaworks.ibm.com. The system enables merchants, such as Internet content providers, to set up "click and pay" links on their Web sites. When an Internet user, referred to herein as a buyer, wishes to receive content from the merchant's site, the user clicks on the appropriate link. A micro payment amount associated by the link, which is set and posted by the merchant, is then automatically transferred from a Client Wallet maintained by the user to the merchant's account. Upon receiving the micro payment, the merchant's Web server

downloads the desired content to the buyer, typically in the form of a Web page, which is displayed by the buyer's Web browser. "Content" in this context can comprise substantially any sort of information, entertainment or services that are amenable to this mode of distribution, for example:

- Information such as news, financial data, archives, reference sources, sports scores, reviews and consumer information.
- Media and entertainment, such as music, video, pictures games and "edutainment."
- On-line services, such as search engines, fax, mail, telephony, billboards and classified advertisements.
- Products, particularly software.

The IBM Micro Payment system includes three main components:

- Billing Server, the Micro Payment "bank," where all server and client management functions are conducted. These functions include adding, disabling and deleting clients; setting credit limits and commission rates; establishing relationships with other Billing Servers; processing payment to merchant accounts; and signing daily certificates.
- Merchant Server, maintained by the merchant, enabling the merchant to manage merchant accounts with the Billing Server; and to set up Hypertext Mark-up Language (HTML) Page Per Fee ("click and pay") links and to collect micro payments from buyers who use the links.

- Client Wallet, used by the buyer to open and maintain buyer accounts with the Billing Server and to purchase items sold through Page Per Fee links.

5 The Billing Server sends a daily credential to the buyer.

~~To make a purchase, the buyer proves his identity and~~
creditworthiness by sending a signed purchase order message to the merchant and attaching the credential.

(These functions are performed automatically by a plug-in

10 to the buyer's browser.) The merchant then returns the requested Web page or pages to the buyer, after verifying the purchase order with the Billing Server if desired.

Periodically, the Merchant Server deposits the purchase orders it has received with the Billing Server and
15 receives in return the designated payment amount, less commissions charged by any Billing Servers that are involved.

Payment of commissions for sales referrals is a well-known business model, which has been extended to the
20 realm of electronic commerce. For example, it is common

~~for one Web site to post an advertisement for goods or~~
services for sale on another Web site. The HTML code of

the advertisement typically contains a uniform resource locator (URL) leading to the seller's site. When a user

25 clicks on such an advertisement, the seller's Web page opens on the user's browser, and the user is invited to make the purchase. The advertiser is compensated on the

basis of the number of "click-throughs" to the seller's site and/or as a percentage on sales made on such

30 click-throughs. Methods of on-line advertising are described, for example, in U.S. Patents 5,305,195 and

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5,937,392, whose disclosures are incorporated herein by reference.

While there are various solutions known in the art that enable the advertiser to count the number of
5 click-throughs to the seller's site, it is much more
~~difficult to track the percentage commissions that may be~~
due. This difficulty is particularly intractable in the case of micro payments, in which a great many commission payments in very small amounts are typically involved.

10 Generally, the advertiser must simply trust the seller to deliver the commissions as agreed. Typically, the seller identifies the advertiser by a parameter included in the purchase request submitted by the buyer, by a cookie added to the request, or by an identification of the site
15 from which the buyer linked to the seller's site. The advertiser can know that the seller received the request only if the request is sent through the advertiser. Since the commission amounts are typically small (especially when micro payments are involved),
20 advertisers often have to wait a very long time to be paid,
~~until a sufficient amount of commission payments~~
has accumulated.

SUMMARY OF THE INVENTION

It is an object of some aspects of the present invention to extend the micro payment model so as to enable micro payments to be made to third-party
5 advertisers, as well as to the merchants themselves. In

other words, the present invention seeks to provide methods and systems in which such an advertiser may proffer on its own Web site content that is available for a fee on a merchant's Web site. In return, the
10 advertiser receives a share of micro payments made by buyers who access the merchant's content through the advertiser's Web site.

Thus, in preferred embodiments of the present invention, a micro payment system includes at least four
15 parties: a billing server, a merchant, a buyer and an advertiser. The merchant offers content for sale, preferably in the form of "click and pay" Web pages, each with a designated price to the buyer and commission rate to the advertiser. The merchant publishes the price of
20 the content, as well as the commission rates and any

other conditions relevant to the advertiser, so that the advertiser may decide whether and how to publish an advertisement for the item. [For each page, the merchant defines an alias, identifying the page in such a manner
25 that only the merchant can determine, upon receiving a request for the alias, the real page that is requested. The alias is preferably specific to the advertiser, so that the merchant and/or the billing server, can determine the identity of the advertiser from the alias
30 used. The merchant provide the advertiser with the alias upon request.] The advertiser includes the alias in code, preferably in a mark-up language such as HTML, XML or

WML, that is used in an advertisement offering the merchant's content on a Web site belonging to the advertiser. The advertiser also receives a password from the merchant, which is then used by the merchant to
5 authenticate content requests made by the advertiser.

----- The buyer--visiting--the--advertiser's--Web--site-----
purchases the advertised content by clicking on the advertisement. The buyer's signed purchase order is then passed to the merchant, either directly or through the
10 advertiser. The merchant processes the sale and passes the content back, directly or through the advertiser, to the buyer. Both the advertiser and the merchant can thus have a complete record of all micro payment purchases made through the advertiser, so that the advertiser is
15 assured of receiving the full commission that is due. The commission may be paid either by the merchant or by the billing server, in accordance with whatever agreement the merchant and advertiser have made with one another. The use of aliases to represent the pages purchased by
20 the buyer also prevents the buyer from learning the merchant's URL, making it difficult for the buyer to circumvent the advertiser in subsequent purchases from this merchant. The advertiser will therefore be able to enjoy a long-term revenue stream on repeat purchases.

25 The present invention thus extends the realm of "click and pay" commerce to include advertisers, as well, in addition to buyers and merchants. It is applicable to substantially any sort of content or other items that are amenable to sale by micro payment. In the context of the
30 present patent application and in the claims, the terms "click and pay" and "page per fee" are used interchangeably to describe methods and systems of

commerce in which a buyer is debited directly by a seller for selecting a network link (typically a link on a Web page), without a separate ordering or credit approval process.

5 There is therefore provided, in accordance with a preferred embodiment of the present invention, a method for electronic advertising by an advertiser, including:

posting an advertisement for an item offered to a buyer for purchase from a merchant on a page per fee basis at a predetermined price via a network link to a network address represented in the advertisement by an alias, which conceals the network address from the buyer;

receiving an invocation of the link from the buyer;

responsive to the invocation, transmitting an order to the merchant for supply of the item to the buyer in exchange for payment of the price by the buyer;

conveying the item, responsive to the order, from the merchant to the buyer; and

receiving a predefined portion of the price paid by the buyer in consideration for posting the advertisement.

Preferably, posting the advertisement includes displaying the advertisement on a Web site maintained by the advertiser and accessible to the buyer via the Internet, and receiving the invocation includes receiving an indication that the buyer has selected the link. Further preferably, transmitting the order includes transmitting the order in exchange for a micro payment made from the buyer to the merchant. Most preferably, responsive to the micro payment, a billing server transfers a credit to the merchant, and receiving the predefined portion of the price includes receiving from the billing server a portion of the micro payment.

Alternatively, receiving the predefined portion of the price includes receiving from the merchant a portion of the micro payment. In a preferred embodiment, conveying the item includes allowing the buyer to access one or
5 more Web pages of the merchant.

~~Preferably, the alias is assigned by the merchant to~~
correspond to the item offered for purchase, and sending the communication includes passing the alias, preferably in a coded form, from the advertiser to the merchant.
10 Further preferably, the alias is assigned by the merchant to correspond specifically to the advertiser, among a plurality of advertisers who post the advertisement.

Additionally or alternatively, transmitting the order includes sending a communication from the
15 advertiser to the merchant including an identifying code issued to the advertiser by the merchant. Further additionally or alternatively, transmitting the order includes making a record of the order for use in verifying that the predefined portion of the price is
20 paid to the advertiser by the merchant.

~~Preferably, posting the advertisement includes~~
posting the advertisement in accordance with advertising terms published by the merchant, and receiving the predefined portion of the price includes receiving the
25 portion as specified by the advertising terms. Most preferably, transmitting the order includes submitting, along with the order, a coded reference to the advertising terms.

There is also provided, in accordance with a
30 preferred embodiment of the present invention, a method for electronic commerce by a merchant, including:

offering an item for purchase by a buyer on a page per fee basis at a predetermined price via a network link;

defining terms for advertising, in accordance with
5 which an advertiser posts an advertisement for the item,
the advertisement containing a reference to the network
link;

receiving from the advertiser an order for supply of
the item to the buyer responsive to invocation of the
10 link in the advertisement by the buyer;

conveying the item, responsive to the order, via the
advertiser to the buyer; and

receiving payment from the buyer for the item, while
a predefined portion of the price is paid to the
15 advertiser in consideration for posting the
advertisement, in accordance with the terms of
advertising.

There is additionally provided, in accordance with a
preferred embodiment of the present invention, apparatus
20 for electronic advertising by an advertiser, including an
advertising processor, which is adapted to post an
advertisement for an item offered to a buyer for purchase
from a merchant on a page per fee basis at a
predetermined price via a network link to a network
25 address represented in the advertisement by an alias,
which conceals the network address from the buyer, and
responsive to receiving an invocation of the link by the
buyer, to transmit an order to the merchant for supply of
the item to the buyer in exchange for payment of the
30 price by the buyer, to convey the item, responsive to the
order, from the merchant to the buyer, and to receive a

predefined portion of the price paid by the buyer in consideration for posting the advertisement.

There is further provided, in accordance with a preferred embodiment of the present invention, apparatus
5 for electronic commerce for use by a merchant, including a merchant processor, which is adapted to offer an item
for purchase by a buyer on a page per fee basis at a predetermined price via a network link, with defined
terms for advertising in accordance with which an
10 advertiser posts an advertisement for the item, the advertisement containing a reference to the network link,
the processor being further adapted to convey the item via the advertiser to the buyer in response to an order
received from the advertiser for supply of the item to
15 the buyer responsive to invocation of the link in the advertisement by the buyer, and to receive payment from
the buyer for the item, while a predefined portion of the price is paid to the advertiser in consideration for
posting the advertisement, in accordance with the terms
20 of advertising.

There is moreover provided, in accordance with a preferred embodiment of the present invention, a computer
software product for electronic advertising by an advertiser, the product including a computer-readable
25 medium in which program instructions are stored, which instructions, when read by a computer, cause to computer
to post an advertisement for an item offered to a buyer for purchase from a merchant on a page per fee basis at a
predetermined price via a network link to a network
30 address represented in the advertisement by an alias, which conceals the network address from the buyer, and
responsive to receiving an invocation of the link from

the buyer, to transmit an order to the merchant for supply of the item to the buyer in exchange for payment of the price by the buyer, to convey the item, responsive to the order, from the merchant to the buyer, and to
5 receive a predefined portion of the price paid by the buyer in consideration for posting the advertisement.

There is furthermore provided, in accordance with a preferred embodiment of the present invention, a computer software product for electronic commerce for use by a
10 merchant, the product including a computer-readable medium in which program instructions are stored, which instructions, when read by a computer, cause to computer to offer an item for purchase by a buyer on a page per fee basis at a predetermined price via a network link,
15 with defined terms for advertising in accordance with which an advertiser posts an advertisement for the item, the advertisement containing a reference to the network link, the instructions further causing the computer to convey the item via the advertiser to the buyer in
20 response to an order received from the advertiser for supply of the item to the buyer responsive to invocation of the link in the advertisement by the buyer, and to receive payment from the buyer for the item, while a predefined portion of the price is paid to the advertiser
25 in consideration for posting the advertisement, in accordance with the terms of advertising.

The present invention will be more fully understood from the following detailed description of the preferred embodiments thereof, taken together with the drawings in
30 which:

Fig. 3 is a flow chart that schematically illustrates a method for carrying out a transaction through a Web site advertisement, in accordance with a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Fig. 1 is a block diagram that schematically illustrates a system 20 for electronic commerce based on micro payments, in accordance with a preferred embodiment of the present invention. The system enables a buyer 22 to access and purchase content on a Page-Per-Fee basis from a merchant 24, via an network 26, typically via the Internet. Payment for the content is made through a billing server 30. In all of these respects, system 20 resembles the IBM Micro Payment system described in the Background of the Invention. Alternatively, elements of other payment systems known in the art, including other micro payment systems, may be used. System 20 differs from all of these prior art systems, however, in that rather than interacting directly with merchant 24, buyer 22 purchases the content through an advertisement posted on a Web site of an advertiser 32. Methods for posting this advertisement and for transfer of content and payments in conjunction with the advertisement are described hereinbelow.

~~Buyer 22, merchant 24 and advertiser 32 carry out~~ their functions by means of suitably-programmed processors, typically general-purpose computers, linked to network 26. Software needed by these computers and by server 30 to carry out their respective functions may be downloaded to the computers over network 26. Alternatively, the software may be supplied on tangible media, such as CD-ROM or nonvolatile memory.

Fig. 2 is a flow chart that schematically illustrates a method for preparing an advertisement on the Web site of advertiser 32, for sale of content by merchant 24, in accordance with a preferred embodiment of

the present invention. At a policy setting step 40, the merchant defines an advertisement policy, specifying the commissions that the merchant is willing to pay advertisers for advertising the merchant's content, and

5 who is eligible to become an advertiser under this policy. At an advertisement contract step 41, the merchant

receives a request from an advertiser to advertise the content. [At an alias definition step 42, the merchant

10 defines an alias for each content page that the advertiser is to offer. The aliases are designed to be used in the advertisement in place of the URLs that would conventionally be used in a Web advertisement to name the pages requested from the merchant. Preferably the aliases are specific to each advertiser and contain the
15 real page names in coded form or point to the real names in a table maintained by the merchant, so that the merchant can efficiently map the aliases back to the original page names, but the buyer cannot.]

Each eligible advertiser who wishes to advertise the
20 merchant's content enters into a commission agreement with the merchant, specifying how and when the advertiser

is to be compensated. The merchant then provides the advertiser with merchant and advertiser identification codes, along with a unique password, at a password
25 assignment step 44. The password is used subsequently by the merchant to authenticate content requests made through the advertiser. At this point, the advertiser is able to post a suitable advertisement for the merchant's content on the advertiser's Web site, at a publication
30 step 46. Code associated with the advertisement typically contains the following information, preferably in the form of suitable HTML code:

- A description, using text, graphics and/or other media, of the item for sale.
- The alias of the page name corresponding to the item.
- 5 • The price of the item (including the advertiser's commission) and duration of validity of the offer.
- The merchant identification code.
- The advertiser identification code.
- 10 • The location of a processing script for handling buyer purchase orders.
- A reference to the advertiser password, preferably a coded reference generated by a hash function of the password, advertiser
- 15 identification code and page alias.
- A reference to the commission terms to which the advertisement is subject, also preferably coded in the form of a hash function.

Fig. 3 is a flow chart that schematically

20 ~~illustrates a method for receiving and handling purchase~~
orders placed by buyer 22 through advertiser 32, in accordance with a preferred embodiment of the present invention. The method begins at a visitation step 50, when the buyer visits the advertiser's Web site, at which

25 the advertisement posted at step 46 (Fig. 2) is displayed. After reading about the item of content offered in the advertisement, the buyer selects the item, typically by clicking on it with a mouse, at a selection step 52. At this stage, the buyer's computer generates a

30 micro payment purchase order. Alternatively, depending on the configuration of the micro payment system being

used, the buyer's computer at this stage asks billing server 30 to generate the purchase order with its signature certifying the payment. In either case, the buyer's computer signs the purchase order, and the order is submitted over network 26 to the advertiser or directly to the merchant, at an order signing step 54. In addition to the electronic signatures of the buyer and/or the billing server, the order may be accompanied by one or more electronic certificates from billing server 30 (or some other reliable source).

At an order submission step 55, the buyer preferably sends the purchase order to the advertiser. Then, at a forwarding step 56, the advertiser forwards the order to the merchant, preferably after checking it as described below. (Alternatively, the buyer may submit the order directly to the merchant.) The merchant checks and approves the order using a processing script, preferably a CGI script or servlet, at a processing step 57. There are a number of elements to the approval process:

1. Approving the purchaser - verifying the buyer's and/or billing server's signature(s) and certificates.

2. Approving the purchase order - verifying that the page identified by the alias is for sale and that the price is acceptable and within the validity period.

3. Approving the advertiser - verifying the advertiser identification and password and that the hashed commission agreement is valid.

The processing script may run on either or both the advertiser's computer and the merchant's computer. Running elements of the script (element 1 and possibly

element 2 above) on the advertiser's computer has the advantage of giving the advertiser closer control over sales made through the advertiser. On the other hand, implementation is simpler and faster if the entire script
5 runs only on the merchant's computer, and the advertiser simply passes the purchase order through to the merchant for processing.

At the conclusion of step 57, the merchant and/or advertiser decides whether to approve the order. If any
10 of the required elements is missing or invalid, the order is rejected, and an error message is returned, at an error step 58. Otherwise, the order is approved, and the sale is logged by the merchant and, preferably, by the advertiser. The requested item is then delivered to the
15 buyer, at a delivery step 60, typically in the form of a Web page (identified by its alias) passed from the merchant, either directly or through the advertiser.

At a deposit step 61, the merchant deposits the purchase order with billing server 30. If the order was
20 passed through the advertiser, then the advertiser may submit it as well at this step, to ensure receiving the proper commission. The buyer's account with billing server 30 is debited in the appropriate amount, at a debit step 62, and the merchant and advertiser accounts
25 are credited accordingly, at a credit step 64. If the purchase order was sent directly to the merchant and did not pass through the advertiser, then it is the responsibility of the billing server to appropriately credit the advertiser. The advertiser receives the
30 credit in whatever form and amount were agreed upon in the commission agreement. For example, the advertiser's account may be credited directly by the billing server in

response to debiting the buyer's account. Alternatively, the merchant may be responsible for transferring the credit or other payment to the advertiser.

Although aspects of the preferred embodiments
5 described hereinabove make particular reference to micro
payments, and especially to elements of the IBM Micro
Payment system, the principles of the present invention
may be applied in a straightforward manner using other
tools and methods of electronic commerce, as are known in
10 the art. It should also be understood that although
these preferred embodiments are based on Page Per Fee
sales of content over the Internet, the business model
and methods described herein are applicable generally to
sales of different sorts of goods and service items. It
15 will thus be appreciated that the preferred embodiments
described above are cited by way of example, and that the
present invention is not limited to what has been
particularly shown and described hereinabove. Rather,
the scope of the present invention includes both
20 combinations and subcombinations of the various features
described hereinabove, as well as variations and
modifications thereof which would occur to persons
skilled in the art upon reading the foregoing description
and which are not disclosed in the prior art.